Amendments to the Claims:

Listing of Claims:

1. (Original) A composition of dibenzo-alpha-pyrones chromoproteins (DCPs) comprising:

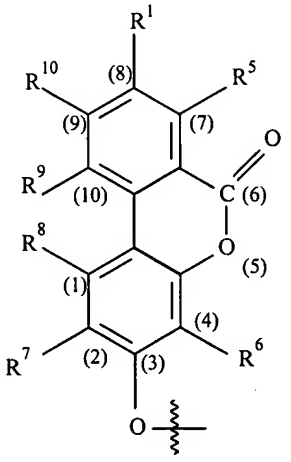
a. dibenzo-alpha-pyrones or their derivatives;

b. phosphocreatine;

c. chromo-peptides of molecular weights of about $\leq$ 2 KD; and

d. lipids having fatty acyl esters of glycerol.

2. (Original) A composition according to claim 1 comprising said dibenzo-alpha-pyrones of formula (I)



(I)

wherein:

R^1 is selected from the group consisting of H, OH, O-acyl, and O-amino-acyl; and

R^5, R^6, R^7, R^8, R^9, and R^{10} are independently selected from the group consisting of H, OH, O-acyl, O-amino-acyl, and fatty acyl groups.

3. (Original) A composition according to claim 1 wherein said phosphocreatine is attached to the 3- or 8-position of said dibenzo-alpha-pyrones via an ester linkage.

4. (Original) A composition according to claim 1 wherein said chromo-peptides further comprise:

one or more amino acids;

carotenoids; and

indigoids.

5. (Original) A composition according to claim 1 wherein said chromoproteins have a molecular weight of about 2 to about 20 KD.

6. (Original) A composition according to claim 5 wherein said chromoproteins comprise of one or more amino acids selected from the group consisting of methionine, arginine, glycine, alanine, threonine, serine, proline, and hydroxyproline.

7. (Original) A composition according to claim 1 wherein said chromopeptides comprise of a carotenoid moiety, said carotenoid moiety is astaxanthin and equivalents.

8. (Original) A composition according to claim 1 wherein said lipids are saturated or unsaturated fatty acids having a carbon chain length of about C_{14} to C_{24}.

9. (Original) A composition according to claim 8 wherein said polyunsaturated fatty acid substituents have a degree of unsaturation of one to six.

10. (Original) A composition according to claim 9 wherein said polyunsaturated fatty acids are eicosapentaenoic acid and / or docosahexaenoic acid.

11. (Currently amended) A composition according to claim 1 wherein said DCPs further comprise iron, calcium, copper, zinc, magnesium, vanadium, and/or ~~chromium~~ metal ions ranging from about 1 to about 500 ppm levels.

12. (Original) A composition according to claim 1 wherein said DCPs further comprise low molecular weight ligands.

13. (Original) A skin care, hair care, pharmaceutical, or nutritional or veterinary formulation comprising the composition of claim 1 present therein in an amount of about 0.05 to about 50% by weight.

14. (Original) A skin care or protection formulation according to claim 13 where said skin care or protection formula is in the form of a lotion, cream, gel or spray, and said composition is present in an amount of about 0.05 to about 5% by weight.

15. (Original) A pharmaceutical formulation according to claim 13 wherein said pharmaceutical formulation is in the form of a tablet, syrup, elixir or capsule.

16. (Original) A nutritional formulation according to claim 13 wherein said nutritional formulation contains about 0.5 to about 30% of said composition.

17. (Original) A skin care or protection formulation according to claim 14, further comprising a cosmetically acceptable carrier and at least one cosmetic adjuvant selected from the group consisting of sunscreens, antioxidants, preservatives, self-tanning agent, perfumes, oils, waxes, propellants, waterproofing agents, emulsifiers, thickeners, humectants, and emollients.

18. (Original) A pharmaceutical formulation according to claim 15 further comprising pharmaceutically acceptable carriers.

19. (Original) A nutritional formulation according to claim 16 further comprising nutritionally acceptable carriers.

20. (Original) A process for isolating DCP compositions according to claim 1 from shilajit compositions comprising at least 0.5%-10% w/w dibenzo-alpha-pyronechromoproteins, said process comprising the steps of:

1) powdering native shilajit rock material and extracting it successively with hot ethyl acetate and methanol to remove the soluble low and medium molecular weight organic compounds by filtration;

2) triturating said ethyl acetate and methanol insoluble material with hot water and then citrate buffer of pH 5.0;

3) filtering the combined extract-mixture to remove insoluble substances comprising polymeric humic materials, minerals and metal ion salts;

4) gradually saturating the combined aqueous filtrate with increasing concentrations of ammonium sulphate to obtain purple-brown precipitate of mixture of DCPs, or concentrating said combined aqueous solution and adding acetone to precipitate DCPs as brownish-red or off-white precipitate and filtering said DCPs and evaporating the filtrate to obtain an additional lot of mixture of DCPs of lesser complexities; and

5) fractionating the purple-brown solid residues, obtained from ammonium sulphate saturation by Sephadex gel-filtration and electrophoresis to isolate DCP compositions from shilajit.

21. (Original) A process according to claim 20 wherein said shilajit composition is about 12% to about 40% w/w dibenzo-alpha-pyronechromoproteins.

22. (Original) A process for isolating DCP compositions according to claim 1 from fossils of ammonites, said process comprising the steps of:

1) powdering ammonite fossil materials and extracting it successively with hot ethyl acetate and methanol to remove the soluble low and medium molecular weight organic compounds by filtration;

2) triturating said ethyl acetate and methanol insoluble material with 0.1 N HCl;

3) filtering the aqueous acidic extract to remove insoluble substances comprising polymeric humic materials and dissolving in minimum volume of water;

4) gradually saturating the aqueous solution with increasing concentrations of ammonium sulphate to obtain purple-brown precipitate of mixture of DCPs, *or* concentrating said combined aqueous solution and adding acetone to precipitate DCPs as brownish-red or off-white precipitate and filtering said DCPs and evaporating filtrate to obtain an additional lot of mixture of DCPs of lesser complexities; and

5) fractionating the purple-brown solid residues, obtained from ammonium sulphate saturation by Sephadex gel-filtration and electrophoresis to isolate DCP compositions from fossils of ammonites.

23. (Original) A process for isolating DCP compositions according to claim 1 from fossils of corals, said process comprising the steps of:

1) powdering coral fossil materials and extracting it successively with hot ethyl acetate and methanol to remove the soluble low and medium molecular weight organic compounds by filtration;

2) triturating said ethyl acetate and methanol insoluble material with 0.1 N HCl;

3) filtering the aqueous acidic extract to remove insoluble substances comprising polymeric humic materials and dissolving in minimum volume of water,

4) gradually saturating the aqueous solution with increasing concentrations of ammonium sulphate to obtain purple-brown precipitate of mixture of DCPs, *or* concentrating said combined aqueous solution and adding acetone to precipitate DCPs as brownish-red or off-white precipitate and filtering said DCPs and evaporating filtrate to obtain an additional lot of mixture of DCPs of lesser complexities; and

5) fractionating the purple-brown solid residues, obtained from ammonium sulphate saturation by Sephadex gel-filtration and electrophoresis to isolate DCP compositions from fossils of corals.

24. (Original) A process for isolating DCP compositions according to claim 1 from invertebrates, said process comprising the steps of:

1) extracting body flesh with hot ethyl acetate to remove low molecular weight free organic compounds and lipids as the soluble fraction;

2) extracting said ethyl acetate with Bligh and Dyer solvent system;

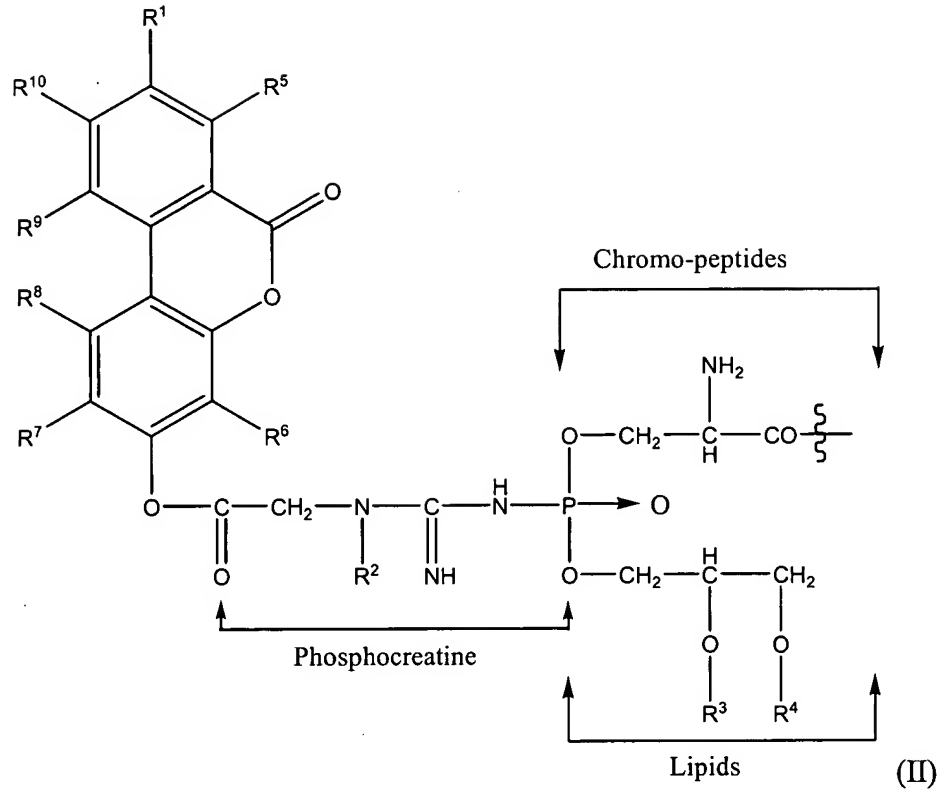
3) evaporating said Bligh and Dyer solvent extractive under reduced pressure and dissolving in minimum volume of water;

4) gradually saturating said water with increasing concentrations of ammonium sulphate to obtain purple-brown precipitate of mixture of DCPs, or concentrating said combined water solution and adding acetone to precipitate DCPs as brownish-red or off-white precipitate and filtering said DCPs and evaporating filtrate to obtain an additional lot of mixture of DCPs of lesser complexities; and

5) fractionating the purple-brown solid residues, obtained from ammonium sulphate saturation by Sephadex gel-filtration and electrophoresis to isolate DCP compositions from invertebrates.

25. (Original) A method for treating chronic stress, comprising administering to a patient in need thereof a therapeutically effective amount of a composition according to claim 1.

26. (Currently amended) A composition comprising of dibenzo-alpha-pyrone chromoproteins (DCPs) of formula ~~(II)~~ (I):



(II)

wherein:

R^1 is selected from the group consisting of H, OH, O-acyl, and O-amino-acyl;

R^2 is selected from H and CH_3;

R^3 is selected from H and fatty acids;

R^4 is selected from H and fatty acids; and

R^5, R^6, R^7, R^8, R^9, and R^{10} are independently selected from the group consisting of H, OH, O-acyl, O-amino-acyl, and fatty acyl groups.

27. (Currently amended) A composition according to claim 26 wherein said DCPs further comprise iron, calcium, copper, zinc, magnesium, vanadium, and/or ~~chromium~~ metal ions ranging from 1 to 500 ppm levels.

28. (Original) A composition of claim 27 wherein said DCPs further comprise low molecular weight ligands.

29. (Original) A skin care, hair care, pharmaceutical, or nutritional formulation comprising the composition of claim 26 present therein in an amount of about 0.05 to 50% by weight.

30. (Original) A method for treating chronic stress disorders, comprising administering to a patient in need thereof a therapeutically effective amount of a composition according to claim 26.

31. (Original) A method for increasing a cognition effect of learning, comprising administering to a patient in need thereof a therapeutically effective amount of a composition according to claim 13.

32. (Original) A method for treating stress disorders, comprising administering to a patient in need thereof a therapeutically effective amount of a composition according to claim 13.

33. (Original) A method according to claim 32, wherein the disorder is selected from anxiety induced stress, depression induced stress, thermic change induced stress, gastric ulcer induced stress, convulsion induced stress, and adrenocortial induced stress.

34. (Original) A method for modulation of an immune system by increasing antioxidant defense enzymes selected from the group consisting of super oxide dismutase (SOD), catalase, and glutathione peroxidase comprising administering to a patient in need thereof a therapeutically effective amount of a composition according to claim 13.

35. (Original) A method for increasing a cognition effect of learning, comprising administering to a patient in need thereof a therapeutically effective amount of a composition according to claim 29.

36. (Original) A method for treating stress disorders, comprising administering to a patient in need thereof a therapeutically effective amount of a composition according to claim 29.

37. (Original) A method according to claim 36, wherein the disorder is selected from anxiety induced stress, depression induced stress, thermic change induced

stress, gastric ulcer induced stress, convulsion induced stress, and adrenocortial induced stress.

38. (Original) A method for modulation of an immune system by increasing antioxidant defense enzymes selected from the group consisting of super oxide dismutase (SOD), catalase, and glutathione peroxidase comprising administering to a patient in need thereof a therapeutically effective amount of a composition according to claim 29.